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STATE GEOLOGICAL SURVEY DIVISION

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JOHN C. FRYE, CHIEF
 121 NATURAL RESOURCES BUILDING
 UNIVERSITY OF ILLINOIS CAMPUS
 URBANA

GEOLOGIC REPORT ON GROUNDWATER POSSIBILITIES FOR COMMUNITY SUPPLY NEAR EAST CHICAGO HEIGHTS, COOK COUNTY SECTION 23, T. 35 N., R. 14 E.

By

EPA Region 5 Records Ctr.



303324

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(Prepared in response to the inquiry of Mr. N. N. Ridker, President,
 Homeland Construction Company, 139 North Clark Street, Chicago 2,
 Illinois)

Industrial and municipal groundwater supplies in southern Cook County are obtained principally from the Niagaran-Alexandrian dolomite, which directly underlies the unconsolidated surface material, and from the deep Galesville sandstone, below 1600 feet in depth.

Following is a summary log of the geologic formations believed to lie beneath Section 23, T. 35 N., R. 14 E. Formation thicknesses and depths are estimated from drilling data in the area, including the log of Chicago Heights City Well No. 3 located about two miles west of the proposed community development.

<u>System and Formation</u>	<u>Thickness</u>	<u>Depth of Base</u>	<u>Characteristics</u>
Pleistocene System Silt, clay and fine sand	15-40	15-40	Not a possible source of groundwater
Silurian System **Niagaran-Alexandrian dolomite	375 ±	390-425	Contains water-yielding crevices most locations
Ordovician System Maquoketa shale	240 ±	660	Mostly non-water-yielding
Galena-Platteville dolomite	330	990	Few water-yielding crevices
*Glenwood-St. Peter sandstone	160-180	1160	One or more permeable zones
Oneota dolomite	210	1370	Few water-yielding crevices

Cambrian system			Contains water-
*Trempealeau dolomite	105	1475	yielding openings some locations
Franconia sandstone and dolomite	135	1610	Generally not water yielding
**Iron-ton-Galesville sandstone	145	1755	Several zones with good perme- ability
Eau Claire sandstone and shale		below	Generally not water-yielding

* possibly significant water-yielding beds

** most significant water-yielding beds

We do not have sufficient information on hand to predict the amount of water-yielding crevices that would be found in the Niagaran-Alexandrian dolomite near East Chicago Heights. A number of borings, however, report open crevices yielding groundwater in a zone which would lie at a depth of about 230-280 feet. Any drilling in the shallow Niagaran-Alexandrian dolomite for community water supply should penetrate 300-400 feet in order to properly test the suitability of this formation.